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Chair

Mr. James Maloney

Standing Committee on Natural Resources

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● (0850)

[*English*]

The Chair (Mr. James Maloney (Etobicoke [illegible]eshore, Lib.)): Good morning, everybody. Thank you for joining us today.

We have two witnesses joining us in the first hour. Bill Eggertson, the executive director of the Canadian Association for Renewable Energies, is with us this morning. As well, by video conference, we have Pippa Feinstein, from Lake Ontario Waterkeeper.

The process for the morning is that each of you will be given up to 10 minutes to deliver remarks in French and/or English, and then we'll open the floor to questions from around the table.

We're running a little bit late, so why don't we jump right into it.

Mr. Eggertson, why don't you start us off, sir.

[*Translation*]

Mr. Bill Eggertson (Executive Director, Canadian Association for Renewable Energies): Thank you, Mr. Chair.

Members of the committee, good morning.

[*English*]

Energy data have been a focus of mine since 1985, when I was hired to manage the Solar Energy Society of Canada, Inc. after the federal government terminated funding for renewables at the National Research Council. That political decision was partly due to the fact that most Canadians had no idea then of the potential or the need for renewables. We had barely registered on data charts and joked that when a second photovoltaic panel was installed, Canada had increased its PV capacity by 50%.

You have posed five questions on the current state and future of national energy data. Your mistake was asking for my recommendations from 30 years of promoting emerging renewables.

After SESCI, I worked for the national solar and the national wind associations, served as senior writer or editor for the world's two largest magazines on renewables, was trained by Al Gore in his climate reality initiative, spoke at COP 11, managed the U.K. government's climate security program out of Ottawa, currently manage the Canadian Association for Renewable Energies and the Canadian chapter of the International Ground Source Heat Pump Association, and in my spare time serve on three advisory committees on energy or environment for the city and the province. In addition to my professional obsession, I also renovated my older house into one of Canada's top 20 homes for energy efficiency.

The benefits of energy data go far beyond tidy columns of numbers. We do need to know how many million barrels of bitumen are produced, but we also need to know the end use for that oil. Was it burned one time for heat or did it become plastic that can be recycled? How many billion cubic metres of natural gas make fertilizer and how many are burned to generate sine-wave electricity at half the CO2 emissions of coal?

Energy use is finally linked with climate change, and there is an urgent and growing need for clear interpretation of what happens beyond tracking basic production data.

Most users of energy data are geeks like me who care about market share, potential penetration rates, relative movement, and other statistical cross-tabs. As a registered lobbyist, I cite only government figures. You can argue with my assumptions and question my conclusions, but you cannot dispute the statistics.

Experts will never be satisfied with data collection or distribution, but this committee should consider the needs of non-geek Canadians and how the availability of relevant and actionable data can help us become a greener and more sustainable country.

The largest single gap in current datasets is the lack of the detail on end-use application or the disposition of energy. My associations advocate for low-carbon temperature energy in buildings. I crunched NRCan's comprehensive energy use database to show that each home consumes 30,338 kilowatt hours' equivalent of energy, of which 86% is for space heat and water heating. Only a minority is for electric appliances and lights. I then dug deeper to show that an average household emits 4.6 tonnes of carbon, or six pounds per square foot of floor space. Only when numbers are made relevant will people notice, understand, and take the appropriate action.

There are many ways to manage, acquire, and share data, as evidenced by the complex outputs from the office of energy efficiency, the National Energy Board, Statistics Canada, EIA, IEA, EPA, Ernst and Young, Frost & Sullivan and hundreds of private reports that touch on every aspect of energy. When I worked out of the U.S., I liked the EIA reports that were based on mandatory company filings. When I reported out of Britain, EU energy data were culled from a complex structure that makes Canada's federal and provincial jurisdictions look quite simple. However the data are acquired, numbers must be timely, accurate, and open to scrutiny, and, ideally, in the same ballpark. While retaining confidentiality, they must cascade to the lowest possible level of aggregation so they make sense to me as well as to us.

Before I table my top 400 recommendations, I apologize for their cryptic nature and hope they will make sense—

Voices: Oh, oh!

Mr. Bill Eggertson: —based on my earlier commentary or on testimony that you have heard from prior witnesses.

One, data on energy production or consumption should be accompanied by details on its end use. In other words, how is that energy used? A tabular column with this information would allow easy calculation of emissions for CO2, NOx, particulate matter, and other deleterious impacts, which can be mitigated if a specific application is converted to a cleaner source of energy.

Two, there should be more differentiation between electricity and energy. Too many people think electrons are the only game in town, but electricity is a carrier, not an energy. Most is low-carbon hydro or nuclear, and it is only 20% of our national energy mix. That said, watch out for space cooling. Consumption has doubled since 1990 and, thanks to global warming, will continue to grow.

● (0855)

Last week, the IEA warned that space cooling is a critical blind spot in the energy debate.

Three, when tracking electricity, include time of consumption. In Ontario, the price during peak period is double the off-peak rate. This timing detail can facilitate greater adoption of storage, and better grid planning. My house is classified as all electric, but I use less than 10% in peak periods.

Four, I fully support lower carbon emissions, but what do the data say? If all cars in Ontario converted to Teslas, Volts, Priuses, or LEAFs, at current charging efficiency, and drove 18,000 kilometres per year, the resulting demand for fuel is equal to the output of four nuclear reactors. This type of data interpretation is critical to inform our discussion of future energy use and environment.

Five, we should track or estimate non-mainstream renewable energies. One of our oldest and largest energy sources is biomass. How much propane and oil is not combusted thanks to wood stoves? Solar lights are ubiquitous. Passive solar is real energy. Most swimming pools still use solar thermal to heat their water. Again, how much conventional energy is not being consumed because of non-valorized off-grid renewables? We focus on wind turbines and solar panels, both cost-effective technologies, but do not overlook the 80% of energy use that is still high carbon, and which can be displaced relatively easily by thermal renewables.

The ground source heat pump industry is finally explaining that, yes, we need electricity to operate, but we produce fourfold in dispatchable renewable energy from the ground. NRCan estimates our units produced 1.4 billion kilowatt hours in 2010, about 40% of the output from all wind turbines that year. Although smaller than the deep lake water cooling system in downtown Toronto, both towers of the Museum of History are completely space conditioned from the Ottawa River using heat pumps, which most people here do not know.

Six, it would be very difficult to quantify, but please try to track conservation and energy efficiency. Power utilities have set targets. I'm slightly uncomfortable with their methodology, but tracking megawatts and megatherms would benefit all users, as well as save money and emissions.

Seven, reporting national energy data necessitates big numbers with binary prefixes of, "mega", or, "giga", but data must also be available in usable formats and common technology if we want real people to have any real concept of their consumption and the environmental impact of their consumption. I used NRCan data to calculate that the city of Ottawa consumes 178 petajoules across all sectors, which I then converted to 50 billion kilowatt hours, and broke down to each end use. No one knows what a BTU or a decajoule is. To compete with the big boys, we must adopt their terminology so we can be compared on an equal level.

I am not suggesting that SI measures be dropped, just that accompanying charts and graphs also display units that people understand, as grocery stores list the price of tomatoes in pounds, and many thermometers still show degrees Fahrenheit.

In summary, I support many of the suggestions others have made to this committee on fine-tuning the sourcing and sharing of energy data. My objective today is to see if we can inject more colour and more value into any and all numbers that are disseminated. The federal exhortation to limit temperature rise to 2°C is a sexy way to sell that concept, but it could encourage some people to turn up their air conditioners to help keep our planet cool.

As the one-tonne challenge showed, nothing is going to happen until I know what a tonne is, how many tonnes I emit, and how I can reduce my load.

Canada has a lot of energy, so most discussion of energy data is also a discussion of carbon data. If you want me to reduce my carbon footprint, let me see how many kilowatt hours of carbon energy I need to stop burning. If relevant data are provided in an actionable format, a person who wants to change and be part of the solution can and will make the right decisions.

I spend too much time massaging complex big data into manageable packages and interpreting energy issues for concerned individuals. If this committee is setting new guidelines for collection and release of national data, I want you to take over that part of my job.

Thank you, Mr. Chairman.

● (0900)

The Chair: Thank you, Mr. Eggertson.

I think you'd be glad to know that since this study started, there are a few more data geeks around, some of them around this table.

Before we get going, I have presentations from all three witnesses today, but because we received them late, they haven't been translated. I didn't distribute them because of that, but if there's a consensus to do it, we can pass them around. Does anybody object to that? No? Okay. They will be translated, yes.

Ms. Feinstein, we'll move over to you, please.

Ms. Pippa Feinstein (Counsel, Lake Ontario Waterkeeper): Thank you.

Swim Drink Fish Canada/Lake Ontario Waterkeeper is a grassroots environmental organization that uses research, education and legal tools to protect and restore the public's right to swim, drink, and fish in Lake Ontario. As a non-political registered charity, Waterkeeper focuses on research and justice issues in the public interest. It works with communities to facilitate the use of environmental laws to protect their rights to swim, drink, and fish, and it participates in a variety of legal and public consultation processes to help ensure environmental decisions are made on the basis of sound and tested scientific evidence by independent decision-makers in the public interest.

Waterkeeper was invited to present before this standing committee, and we thank you for the opportunity to share our thoughts on the current state and future of energy data in Canada.

This is an important time for federal energy policy, and it is full of promise for creating a more transparent, accountable, and responsive energy planning and regulatory landscape. Last year, Waterkeeper submitted a written paper to the expert panel of the National Energy Board modernization review process. One of our organization's recommendations addressed the need for an independent body responsible for collecting and disseminating energy data and other information. The expert panel's final report also ultimately proposed the creation of a Canadian energy information agency.

At the same time, if such an agency is created and made responsible for producing energy supply and demand forecasts that are then used to inform federal energy policy and assess the economic and technical merits of new energy infrastructure, it must be accompanied by a robust process in which this information can be tested and supplemented by members of the public and public interest organizations with expertise in these areas. Therefore, the development and provision of this data must be understood and designed with this larger regulatory context in mind.

Waterkeeper also made several other information and data-specific recommendations in our report to the expert panel, which may be worth discussing at this time.

First and foremost, the development and publication of energy data must be guided by the public interest. Here, conceptions of the public interest must include the right to a healthy environment and access to information about how energy production can impact the environment. Therefore, environmental data not limited to that concerning climate change must be included prominently in any future energy data hubs and/or platforms. This should include comprehensive pipeline failure data in line with that currently collected by the U.S. Pipeline and Hazardous Materials Safety Administration. It should also include other environmental impacts of energy production and transportation, such as water use and impacts to local watersheds.

Second, the accessibility and user-friendliness of data is crucial. Waterkeeper advocated for standardized and centralized one-window access to energy data from across the country from federal, territorial, and provincial governments and government agencies, as well as universities, industry, and the non-profit sector. A single data hub or platform in which all information has already been collected can be made compatible for comparison and analysis, and this would be immensely useful.

Third, open data and access to disaggregated data, with provisions in place to protect sensitive information, is crucial for government transparency and accountability. It also leads to higher quality science and greater productivity, not to mention facilitating more meaningful public engagement. Further, open-access disaggregated data does not preclude the continued publication of aggregated data and energy reports that are already being undertaken by government and government agencies. It just makes such reports more transparent and accountable.

Significantly, the federal government has an open data plan that contains several commitments to help guide developments in energy data and information-sharing policies. The plan commits to expanding and improving open data across federal public services with special attention paid to the extracted sector, federal science activities, and geospatial data. The way those commitments are phrased provides a lot of opportunity for very creative thinking in terms of interdisciplinary data sharing in this area.

I'll end my presentation there and look forward to your questions. My speaking notes also contain several citations referencing reports with more specific information on each of the recommendations I've just spoken about.

Thank you.

● (0905)

The Chair: Thank you very much.

Mr. Harvey.

Mr. T.J. Harvey (Tobique—Mactaquac, Lib.): Thank you, Mr. Chair.

Thank you to both of our witnesses for being here this morning.

I'm going to start with you, Mr. Eggertson. How do you feel the best way to disseminate this large amount of data potentially could look? What do you think is the best way forward for the federal government to engage in a process that would allow for more unified collection of data from across the entire country that would be available for all groups to view, recognizing that a huge amount of that data comes from private industry? What are your feelings on that?

Mr. Bill Eggertson: Collection of data does become a bit problematic in terms of company confidential information. There are ways of doing it. As I mentioned, the EIA in the United States does a fair amount, and industry complains. I was involved with the ground-source heat-pump industry down there, and they bitched about having to fill out the forms, how many units they were shipping. If kept company confidential, then you have a lot of very good data.

How it's collected, I'd prefer to leave to your legal experts in terms of how to do that. It's a burden, and people will complain that government is interfering again. My focus is more on the dissemination, distribution, publication, and release of this data.

I like the material that comes from the office of energy efficiency. Statistics Canada, in my opinion, is probably the weakest source, because it misses a lot of stuff. I prefer the office of energy efficiency. It has a very large amount of data in downloadable files. I can segment it by which years I want. I can compare year to year. You have to be an expert in Excel to take full advantage, and that's where the geeks will rise to the surface, so to speak.

I would also love to see summary data that is made intelligible for average people, so that they have some idea.... Again, my criticism of the one-tonne challenge was, "Huh? What is a tonne?"

Mr. T.J. Harvey: Do you feel that the most logical way forward is an independent agency that's separate from Statistics Canada and that has a mandate to ensure the data being collected and redistributed in a format—several different formats—is not only relevant but impartial?

Mr. Bill Eggertson: In speaking from the private sector, yes, being arm's length from government is absolutely crucial.

We've seen what's happening in the United States under the current administration. Data can be massaged, perhaps in the wrong way. It's having an arm's-length, very neutral body—and I won't get into the debate over the National Energy Board and whether it was fulfilling its arm's-length mandate—that has the thumbs-up from the federal government: "We believe this. We think it's good. It's open to scrutiny. Everybody has verified it. Everybody has signed off saying they're happy with the way this is collected and the manner in which it is disseminated."

● (0910)

Mr. T.J. Harvey: The system in the United States has veered away from working more collectively with the states. It has basically evolved into a completely independent process that doesn't rely on data from the individual states.

Do you think that's advantageous or disadvantageous for a country like Canada, which has a substantially smaller population base, of course, and smaller resources, to undertake to do something like this without engaging the provinces?

Mr. Bill Eggertson: To respond to your question, it's disadvantageous. The more people who are involved in the collection, the better the final output will be. How you politically or legally do that becomes a problem.

I have concerns about the U.S. data. It's not quite as solid as I used to suspect it was.

In Canada, you're right: we're smaller. Therefore, we have less data and it should be easier for us to collect. Let's use that to our advantage and show the world that we can become a leader in collection and dissemination of good solid data.

Mr. T.J. Harvey: Okay.

Ms. Feinstein, what do you think would be the three biggest steps the federal government could take going forward in the process of unifying this data and trying to do it in a more robust, transparent manner? What are three key take-homes that we could do in a finite amount of time?

Ms. Pippa Feinstein: Speaking as a public interest organization, one of the challenges we face is having a limited capacity to access the information that we need to provide the expertise that we can.

One thing to emphasize would definitely be increasing the accessibility of existing data. I think that can be done quite easily through an online portal without necessarily the need for lots of policy or legislative development. That could be done quite easily and quite quickly by links to other websites, that online way of doing things. That's one emphasis.

Another emphasis to increase transparency is to just release more disaggregated, raw data. Right now as an organization, if we want to look at forecasts of energy use and demand, etc., it's often provided in very digested forms. The data isn't separated from the analysis of that data. Sometimes there's a lack of disclosure of the methodologies that are used to interpret the existing data. Just providing the raw data to the public or providing more information about the methodologies used to interpret that data would be very useful for us. We would be able to see the bases of government assumptions about energy use and the future of energy policy. Again, that's something that can be done quite easily.

I would also suggest something that facilitates more real-time data disclosure, when it's just given in a raw format. Again, generally speaking, that is not as labour intensive.

The third take-away could be to remember that data disclosure does exist within a larger regulatory context. Going forward, it will be very important to ensure robust hearing processes in which energy policy is determined and oversight over the way governments use energy data to actually inform the creation of policy through hearing and processes.

Mr. T.J. Harvey: Thank you.

The Chair: Mr. Schmale, I believe you're next.

Mr. Jamie Schmale (Haliburton—Kawartha Lakes—Brock, CPC): Thank you.

I thank the witnesses for coming today. We do appreciate that.

I want to talk about the energy data for a second. We're talking about data. Mr. Eggertson, you mentioned about people having the information and understanding more about what it is and how they can help, and that type of thing.

When people do have that information—and we're seeing that people are already reducing their energy consumption as it is—what else could they be doing—that you are seeing in the data you have access to—that they're not doing already?

● (0915)

Mr. Bill Eggertson: I think there are a number of unintended consequences occurring as a result of the people's desire to do the right thing.

I can use a case study of ground-source heat pumps. You can either upgrade the efficiency of your natural gas furnace or you can install a ground-source heat pump. Without burying you in data, one continues to use a combustible fuel that requires pipeline distribution across the country. I'm going to ignore the job creation angle because that's a touchy subject this morning in another setting. You can also install a decentralized ground-source heat pump, which produces.... It literally is the only technology that is net zero, plus it produces more energy than you consume. We automatically win the battle.

My association needs to explain to Canadians that this is a viable option. The payback might take a bit longer but the environmental impact and the impact on your wallet are much lower. People do need to understand a lot more about energy. We need to stop talking about, with respect, 2°C. That doesn't mean anything to a Canadian.

How do you achieve the goal of maintaining 2°C? I think more data in presentable format would convince people to ask, again, if they should be going to electric cars if there is indeed a possibility that doing so will require more nuclear reactors?

I'm not disparaging electric cars, but are we proceeding on the correct path? Should we be having a lot of rebates and incentives? Here in Ontario, you can get a $20,000 rebate for a ground-source heat pump. The last time I was involved, Ontario Hydro gave a rebate of $2,000. The price went up $3,000. People didn't know. They're buying diapers, not because they have a baby but because there was a really great sale on diapers.

I'd like to avoid that type of market-skewing mechanism. The only way that is going to happen is by having an informed populace so they can make the right decisions.

Mr. Jamie Schmale: Another point on that would be the price point they are paying, and if they are able to afford such a technology, but I guess with mass production, the more it's available, the more there is competition, the lower the price will be—that type of thing.

Thank you so much. I appreciate that.

Chair, I do apologize to you and to our witnesses. Given what has developed in the news today, I'd like to move my motion, Chair, as follows:

> That, pursuant to Standing Order 108(2), the Standing Committee on Natural Resources, in light of the potential cancellation of the Trans Mountain Expansion on May 31, 2018 and the flight of investment in oil and gas leaving Canada, immediately invite Mr. Brian Porter, the CEO of ScotiaBank, to appear before the committee to inform the members of how Trans Mountain's cancellation may affect future investment in Canada's oil and gas sector, its supply chain and other resource markets; that the meeting take place no later than May 31, 2018; that the meeting be televised; and that the committee report its findings to the House.

If anyone needs a copy of that motion, I have many in my possession.

You're probably asking why this is so important. I think we all know the deadline that is coming forward very quickly from Kinder Morgan, which is of concern to many, and for those who weren't paying attention to the news this morning, a deal has been announced. The headline from the *Financial Post* says, "Canada said likely to buy Kinder Morgan's Trans Mountain pipeline as deadline looms". It came out about 15 to 20 minutes ago. The article says:

> Canada is likely to buy Kinder Morgan Canada Ltd.'s Trans Mountain oil pipeline and its controversial expansion project in a bid to ensure it gets built amid fierce opposition, according to a person familiar with the talks.
>
> Buying the pipeline outright has become increasingly likely and is now the most probable option for the Canadian government, the person said...because the discussions are private.

It went on to say that the deal, a value for which hasn't been publicly reported—but I think this has been updated since; I believe it's $4 billion—will be announced very shortly.

Here we have, Chair, a private company that did not ask for a single penny of taxpayer dollars being bailed out by a government which, since it approved this project, has been asked by the official opposition hundreds of times over a year and a half to come up with a plan to outline the path forward for the Kinder Morgan Trans Mountain pipeline, a pipeline that has been in existence since the 1950s—it would be an expansion of what is there—a project that required private investment only.

Now we get to the point, because we heard for a year and a half that legislation was coming, that there was a plan in place. No matter how many times we asked for a plan, the blame game started, and that's all we heard, over and over again. Frankly, for the opposition, it was quite tiring to hear from a party on the other side that had complained time after time when they were in opposition that they didn't like the answers they were getting, and in the election they promised Canadians they would be different. You heard that over and over again, that it would be different. And thank you to the NDP, which pointed out that they're actually worse than the previous government, and that is actually quite disgusting for those who voted for real change.

We have this project, a $7-billion project, thousands upon thousands of jobs, and the government bungled the file so badly that now we have to nationalize the project in order to push it through. I think that is quite shameful, and I just cannot believe that we are at the point where all sides in this debate have dug in so hard that Canadian taxpayers are now on the hook for this project.

Who are they going to get to build this pipeline? I would like to know. Are they going to get Enbridge? They're probably not too happy, because their last project was cancelled. Are they going to get TransCanada? No—energy east. Petronas? No, they're probably not going to do it. Petronas thought Canada was the next area to invest in. Their number one area outside Malaysia was Canada, where they saw opportunity and hope, environmental standards and regulations that are the envy of the world, and an energy environment that had access, or so they thought, to many markets. We watched how that fell apart.

● (0920)

How many tens of thousands of jobs and how many good-paying jobs have been lost because of these decisions? I've talked about this many times in question period. I've talked about it many times in this committee.

Even next to my riding, in Peterborough, we had General Electric, where there were 300 jobs lost and there are 300 families without a paycheque. They had a contract to build the motors for the energy east project. That project was cancelled because the government continued to change the rules. Why would TransCanada continue to put good money after bad when they knew that there was no light at the end of the tunnel?

That project got cancelled, and General Electric, which has been in Peterborough since the 1800s—it's known as "Electric City"—closed. Now, that wasn't the main reason that it closed, but it was the straw that broke the camel's back. As you can imagine, the ridiculous price of electricity in Ontario right now is not helping matters much, along with the increased taxes and regulation. On and on, the pile continues to grow.

Now we have this pipeline needing to be nationalized. In this day and age, nationalized: I cannot believe it. This is why we need Brian Porter here. What does this mean for investment in general in Canada? What does it mean for somebody like my friend Marc? What does it mean in his riding for someone with the mining sector? Do they expand? Is there certainty at the end of this tunnel?

For those of us in Ontario, there's the Ring of Fire with its huge resources in the ground. What does that mean? Does any company think that it might be a good idea nowadays with Bill C-69 and many others, and with what's going on here, to dump some good money and convince their investors that, yes, Canada is a place to do business? You never know; you probably won't get your project built, but if it is approved, well, chances are that the government is going to have to bail it out because you can't get it finished anyway.

I just cannot believe this in a country such as Canada, where we had a regulatory process that is the envy of the world, with years and years of consultations upon consultations and environmental standards that are the highest anywhere, and this is how.... This is just incredible.

These are good-paying jobs that do not require taxpayer dollars. They require private investment that companies secure. Mining companies, oil and gas, you name it: they can secure that financing, and then the taxes they pay on that revenue fund our valuable social programs here in Canada, programs that we all love.

Yet now we have to bail out a project that the government approved, all because the Prime Minister did not go to meet with Premier Horgan when he was sworn in and work out the path forward. That is an unbelievable failure.

That is an unbelievable failure on this file. I feel bad for the tens of thousands of Albertans and anyone else employed in the energy sector who have had to wonder if they will get a job. Well, for the longest time it was, will my job ever come back?

I will read this from the *Financial Post*—

● (0925)

The Chair: Just as a courtesy to the witnesses, do you anticipate speaking for more than 15 minutes? If so, then—

Mr. Jamie Schmale: Yes, I think so, Chair.

The Chair: Okay.

Sometimes things change course in the middle of a hearing. As you can see, they have this morning, so unfortunately it looks like we're not going to be in a situation where any more members are going to be asking you questions. You are free to stay and listen, but —

Mr. Jamie Schmale: It's riveting stuff.

The Chair: Yes, it is.

You're also free to go, with our gratitude for coming today. I will leave it to you to do what you want to do.

Mr. Bill Eggertson: Thank you very much.

Mr. Jamie Schmale: A headline from the *Financial Post* for April 1, 2018, reads, "Investment dollars are already flowing out of Canada in 'real time', RBC CEO warns". Below that is written, "Dave McKay says a 'significant' investment exodus to the U.S. is already underway, especially in the energy and clean-technology sectors." The article states:

> The head of one of Canada's largest banks is urging the federal government to stem the flow of investment capital from this country to the United States — because, he warns, it's already leaving in "real time."

RBC president and CEO Dave McKay discussed some of his biggest concerns about Canadian competitiveness, particularly those related to recent U.S. tax reforms, during a recent interview.

Ottawa has come under pressure from corporate Canada to respond to a U.S. tax overhaul that's expected to lure business investments south of the border.

McKay told The Canadian Press that a "significant" investment exodus to the U.S. is already underway, especially in the energy and clean-technology sectors.

The flight of capital, McKay added, will likely be followed by a loss of talent, which means the next generation of engineers, problem solvers and intellectual property could be created not north of the border, but south of it instead.

'We would certainly encourage the federal government to look at these issues because, in real time, we're seeing capital flow out of the country', McKay said.

We see our government going around the world saying what a great place Canada is to invest — yes, it is a great country, it's an inclusive country, it's a diverse country, it's got great people assets.

'But if we don't keep the capital here, we can't keep the people here — and these changes are important to bring human capital and financial capital together in one place.'

Since the election of U.S. President Donald Trump, Canada's investment landscape has been dealing with deep uncertainty related to the ongoing renegotiation of the North American Free Trade Agreement.

But many point to Trump's recent U.S. tax measures as potentially more dangerous, fearing that dramatic corporate tax cuts in the U.S. will eliminate Canada's advantage.

Canada's competitiveness challenges go beyond the high-level, tax-rate changes in the U.S. bill, McKay said.

For instance, he pointed to another important element he said is encouraging capital to flow out of Canada—a change that enables U.S. companies to immediately write off the full cost of new machinery and equipment.

"The acceleration of that in the U.S. completely changes the investment returns that you see on major investments,' said McKay. 'I think that alone may shrink competitiveness.'

Tax expert Jack Mintz said the U.S. change allows firms in all sectors to expense the full cost of new equipment. In comparison, he said, Canada has a two-year write-off for equipment for just the manufacturing and the processing sectors.

Mintz, a University of Calgary professor, said he believes the expensing of capital investments is encouraging a lot of companies to shift their investments to the U.S.

Although the business community pressed federal Finance Minister Bill Morneau to take specific steps in his February budget to address the competitiveness concerns, their efforts went unrewarded. Indeed, Morneau has had to defend the budget against complaints it didn't do enough to protect Canada from the U.S. tax changes.

A spokesman for Morneau did the same, arguing that Canada's corporate tax rates remain competitive and that the country has led the G7 in growth.

"There will be no knee-jerk reactions from this minister, and we are doing our homework,' Daniel Lauzon wrote in an email. 'This includes listening to, and hearing from, the business community on how the competitive environment is evolving.'

John Manley, president of the Business Council of Canada, said the issue of competitiveness was 'absent' from the federal budget.

'We're always in this difficult competition to attract investment and to retain investment—and it's not be taken lightly because investment can move quickly,' Manley said.

● (0930)

Regardless of the cause, some experts are seeing signs in the economic data that suggest capital is already flying south.

BMO chief economist Douglas Porter said it's too early to draw conclusions, but the fact the Canadian equity market and currency have both been on the weak side this year supports the possibility that capital is leaving the country.

The Canadian dollar is one of the few currencies in the world to weaken against the U.S. dollar this year, and for no immediately apparent reason, Porter said.

None of the provincial budgets released so far took steps to improve Canada's competitiveness, such as tax relief, he added.

There you have economist after economist, and a former Liberal cabinet minister from the 1990s, explaining the path forward for the government, explaining to the government that if you do not make Canada a competitive place in which to do business, investment will go elsewhere. It's already happening in real time. Shortly after that, the brain power will follow for those good-paying jobs.

To me, that is something that is extremely concerning. That is something the finance minister continues, time after time, to ignore. Even yesterday in question period we were talking about it, when the finance minister was asked a question about a statement on the Liberal Party website about balancing the budget in 2019. He said we're still on track. But report after report says it's going to be 2045 before this gets balanced, despite new revenue sources coming on with new taxes squeezing more and more out of the pockets of hard-working Canadians, Canadians who are being charged more for the everyday activities in their lives: driving to and from work; getting their kids to sports, music, or dance; going from point A to point B, especially in rural communities where transit is not an option, or rarely an option, where vehicles are relied on to get places, where natural gas is not an option, where most people heat their homes with oil or propane, where those people struggling to get by are being forced to pay more. As the tax is applied throughout the marketplace, the price increases will cascade throughout it.

We're seeing it in Ontario. Over and over again, people are being forced to make a decision on whether they pay their electricity bill or their rent; do they eat or do they get their prescriptions? On the lower end of the scale, they continue to get hurt the most.

That is all due to terrible government policy, yet the solution we hear, especially in Ontario, and it's creeping up to the federal scene because many of those same workers, those political staffers, went from Queen's Park right here to Parliament Hill, is yet another government program, not allowing government to clear the path and get out of the way. Report after report has said, had the government done nothing here in Ontario, we'd be in a much better situation. I'm sure businesses and manufacturing would say that. I have no doubt that everyone at this table from Ontario has met with some manufacturers and talked to them about the hardships they are facing.

● (0935)

This shows how important it is that we talk about the investment that is leaving Canada in real time. This is a serious concern, Mr. Chair. It's extremely concerning.

I'm going to read a story from the *National Post* that lays out the case of why it should be Kinder Morgan that actually builds the pipeline.

You're actually lucky. You are saved from that. It seems to have disappeared from my news feed, but I'll get you another one.

It was done by Andrew Coyne and actually layed out the case as to why Kinder Morgan was the right company to build this project. I will just read you the latest here.

Oh, there we go. Thank you, Shannon.

This is from from May 18, 2018.

> Andrew Coyne: The Liberals need a pipeline to be built, and they need Kinder Morgan to build it.
>
> Just to recap: In the quest to ship Alberta crude to overseas markets, the federal Liberals are down to one pipeline, having killed off Northern Gateway and allowed Energy East to die.
>
> That pipeline, the Trans Mountain expansion, is now itself in considerable doubt, in part owing to the Liberals' previous encouragement (previous, that is, to coming to power) of its most determined opponents: by their delegitimization of the National Energy Board, which approved it; by the prime minister's apparent endorsement of the extra-legal doctrine of "social licence," and by his apparent endorsement of another position found nowhere in law: that First Nations have a right, not just to be consulted, but to approve or disapprove of projects on lands to which they claim title.
>
> It gets worse. With just one pipeline left to build, and having done their best to ensure it won't be built, the Liberals — having since declared (since, that is, coming to power) that in fact it will be built — are now down to one company to build it. One, or maybe none.
>
> The company that was going to build it, Kinder Morgan, last month said it will not proceed without some assurance that it can proceed — that it will not be subject to such delays, owing to the obstructionist tactics of the NDP government of British Columbia —

Sorry, Richard.

> — as to make the whole thing uneconomic. It must have such assurance, the company says, by May 31.

An hon. member: But they don't represent the majority view.

Mr. Jamie Schmale: That's right.

Poll after poll shows that British Columbians clearly are in favour of this pipeline. It's a shame that the Green Party with less than 4% of the vote can control the fate of our country.

An hon. member: It's nothing to do with the Green Party.

Mr. Jamie Schmale: Well, I would tend to disagree with that, Richard. I think the NDP would have...but that's another story. We'll save that for debate.

● (0940)

Mr. T.J. Harvey: The NDP wants this pipeline.

Mr. Jamie Schmale: Where was I? Oh, yes:

> It's not clear the Liberals can offer Kinder Morgan the kind of assurance it needs — not by May 31, at any rate. The B.C. government has since referred a series of questions to the province's Court of Appeal asking whether it has authority to block the shipment of bitumen through the province; even if it is ultimately rebuffed, that is not going to happen before May 31.
>
> The Liberals, meanwhile, have promised legislation clarifying and affirming federal jurisdiction over interprovincial pipelines, so as to deprive the courts of any wiggle room for the usual...finding of shared jurisdiction....The legislation, however, has yet to be produced. With just four sitting days left in the month, it is equally unlikely to be passed in time.

As we found out, there is no legislation coming forward, as was asked many times, especially as I mentioned, in the year and a half the opposition has been asking for a plan.

> So the best the Liberals can offer Kinder Morgan is a series of promises of what will happen after May 31: we'll pass the legislation, we'll win in court, and we'll compensate you for any delays. The finance minister this week described this as... insurance...against the costs of B.C.'s political gamesmanship. How much this might amount to he did not say, with good reason: he can't. It's a matter to be negotiated with Kinder Morgan.

This is true.

> Whereas the Liberals cannot walk away: they've committed, publicly...to the proposition that "the pipeline will be built."

It put the Liberals in a bit of a bind. They do not have a plan. There was no legislation coming forward. Decisions were made today on how we move forward.

I'll fast-forward through the article here. That went to my point.;

> Another possibility being floated is the...federal Infrastructure Bank. You'll recall the point of the bank was to be at arm's-length from political interference, and thus able to raise funds from private investors on strictly commercial terms.

Now, we all know that the Asian infrastructure bank is building pipelines in Asia but yet not in Canada, which I find quite concerning.

It appears that the B.C. NDP solicitor general has said that legal challenges will not stop. Now the finance minister has just asked that it wouldn't, and would not confirm whether Kinder Morgan is in the national interest, which is mind-boggling as well.

We can move forward with this. We have Senator Black's bill. It has passed in the Senate. We could start dealing with this immediately. It's not as if this has surprised anyone.

Mr. T.J. Harvey: I was shocked.

Mr. Nick Whalen (St. John's East, Lib.): Are you guys really saying this is necessary, that you actually need to pass legislation?

The Chair: We're not debating here.

Mr. Schmale, you have the floor.

Mr. Nick Whalen: Is that your legal position on this?

Mr. Jamie Schmale: Clearly, my friend, we were asking for a plan for over a year and a half, and now we get to the point where we have to nationalize a project that did not require anything. Did we need to get to this point? No, Mr. Whalen. No, we did not need to get to this point, my friend, my running partner.

Back when I ran, I was in better shape.

The Chair: We're going to have to start questioning the relevance.

Mr. Jamie Schmale: I was talking about the investment.

Nick and I had some good conversations back when I used to run. Actually, Nick and a bunch of others were some of the first members of the parliamentary running group, but I won't go too much into that.

● (0945)

Mr. Nick Whalen: We'll get back into it.

Mr. Jamie Schmale: We'll get back into it. We keep saying that. That fell by the wayside long ago, at least for me. I can't speak for—

The Chair: Mr. Schmale, even your own colleagues are questioning the relevance of what you're saying right now.

Some hon. members: Oh, oh!

Mr. Jamie Schmale: Chair, they question me all the time, all the time.

Let me talk about why the Kinder Morgan pipeline is so important to our country. I know I touched on it a bit already but I will continue.

The Trans Mountain expansion project was proposed, in response to requests from oil companies, to help them reach new markets by expanding the capacity of North America's only pipeline with access to the west coast.

These shippers have made significant 15- and 20-year commitments that add up to roughly 80% of the capacity in the expanded Trans Mountain pipeline. On November 29, 2016, the Government of Canada granted approval for the Trans Mountain expansion project. Earlier, on May 19, 2016, following a 29-month review, the National Energy Board concluded the project is in the national Canadian public interest and recommended that the federal Governor in Council approve the expansion. These approvals allow the project to proceed with 157 conditions. In addition, the British Columbia Environmental Assessment Office issued an environmental assessment certificate for the Trans Mountain expansion project.

As mentioned, the original Trans Mountain pipeline was built in 1953 and continues to operate safely today. The expansion is essentially a twinning of the existing 1,150 kilometre pipeline between Strathcona County, near Edmonton, Alberta, and Burnaby, B.C. It will create a pipeline system with the normal capacity of the system going from 300,000 barrels a day to 890,000 barrels per day.

It's expected that it will cost—well, we'll see—an estimated $7.4 billion. It will create benefits including new short- and long-term jobs, job-related training and opportunities, and increases in taxes collected by all three levels of government. During the construction phase, the equivalent of 15,000 people will be working on the pipeline expansion and the expansion will also create the equivalent of 37,000 direct and indirect induced jobs per year during operations.

The combined impact on government revenue for construction in the first 20 years of expanded operations is $46.7 billion, revenues that can be used for public services such as health care and education. British Columbia receives $5.7 billion; Alberta receives $19.4 billion, and the rest of Canada receives $21.6 billion. It will be approximately 980 kilometres of new pipeline; 73% of the route will use the existing right of way. Sixteen per cent will follow other linear infrastructures such as telecommunications, hydro, or highways, and 11% will be new right of way. This will include 193 kilometres of reactivated pipeline. Twelve new pump stations will be built.

Nineteen new tanks will be added to the existing storage terminals. There will be three new berths built at the Westridge marine terminal in Burnaby, once the new berths are completed and in service. The number of tankers loaded could increase to 34 a month.

So, why expand? This again goes to how the cancellation could affect—or nationalize now—Canada's oil and gas sector.

Mr. Ted Falk (Provencher, CPC): Are you sharing your time with me?

Mr. Jamie Schmale: If you want me to, I can.

Are you next?

Who's next, just out of curiosity?

The Chair: Ms. Ng.

Mr. Jamie Schmale: Oh, I don't know, Chair....

Mr. Marc Serré (Nickel Belt, Lib.): [*Inaudible—Editor*]

Mr. Jamie Schmale: I guess Ted isn't next. We don't get to hear from Ted. That's a shame. That's a shame for everyone. Canada loses today because we didn't hear from Ted.

The Chair: [*Inaudible—Editor*] is sharing that view because some people are leaving, but anyway.

Mr. Jamie Schmale: Why expand?

The Trans Mountain expansion project will help make sure Canada gets value for its oil. Everyone will benefit. Workers will benefit during the $7.4-billion construction project. Oil producers will earn more revenue for their project. Government will collect more tax revenue from the oil. These revenues contribute to services that benefit all Canadians.

Currently, nearly all the oil produced in western Canada goes to markets in the United States in the Midwest. However, there's a limit to how much oil this market needs. For much of the last decade, Canada has been selling into the United States at a discount to the world price for similar oil markets. The simple truth is that Canada's oil will fetch a better price if we give ourselves the option of shipping more of it via Trans Mountain's Pacific tidewater terminal in the Burrard Inlet. Canada will earn more on every barrel of oil that is piped west compared to those sold to our existing customers in the United States Midwest market, a differential that exists regardless of the price of oil.

The project will allow Canadian oil to be delivered to international markets, and as a result, Canada will earn approximately $3.7 billion more per year. Independent estimates conclude oil producer revenues will increase by $73.5 billion over 20 years of operations and Canada will earn $46.7 billion in additional taxes and royalties—the federal government's. With oil sands production expanding in Alberta in the years ahead, new markets and new opportunities are emerging. As countries in the Asia-Pacific region begin to develop the same quality of life we enjoy here in Canada, they need sources of energy, and Canada is a natural trading partner.

Now, the question also remains with future investment. One could ask oneself if Canada is able to do that. Well, many oil producers have made significant investments in Canada, 15- to 20-year commitments, as a matter of fact. It adds up to roughly 80% of the capacity in the expanded Trans Mountain pipeline. Some of those companies are Athabasca Oil Corporation, BP Canada, Energy Trading Company, Husky Energy, Imperial Oil, MEG Energy, Suncor, Teck Canadian Energy Sales, Total E&P Canada, and many more.

Am I okay?

● (0950)

The Chair: Can I ask you this? Our witness for the next hour is here. Do you anticipate using the next 50 minutes for your remarks, or should I ask them to stay?

Mr. Jamie Schmale: It's a good question.

The Chair: Thank you.

Mr. T.J. Harvey: It would be kind of nice to tell them.

Mr. Jamie Schmale: Am I going the distance? Yes, I'm going to keep going.

Mr. Nick Whalen: Let us know if you need any help, Jamie.

Mr. Jamie Schmale: Thanks, Nick. I appreciate that, buddy.

Mr. T.J. Harvey: I could look up some articles for you.

I could do some research and bring you over stuff, if you want.

Mr. Jamie Schmale: If you want to, I'd be more than happy to take it.

Should I keep going? I don't know if you have to officially dismiss the witnesses.

The Chair: No, the clerk is.

Mr. Jamie Schmale: Where was I?

Mr. Ted Falk: Well, start over. If you don't know where you were, just start again.

Mr. Jamie Schmale: I should start from the beginning.

Mr. T.J. Harvey: It's always been one great big circle anyway, so you might as well start with me.

Mr. Jamie Schmale: Well, I have to bring it back to the motion, T.J. I don't want you to cut me off.

Mr. Marc Serré: I'm likely to tie it back.

Mr. Jamie Schmale: I've been tying it back the whole time. I'm trying to help you here.

Okay, I'll get back to this article, but I just want to update the committee on the latest.

Canada is spending $4.5 billion to now buy the Trans Mountain pipeline—

Mr. Ted Falk: And another $7 billion to build it.

Mr. Jamie Schmale: That's right. It's another $7 billion to build it. Now we have a government that's in the energy business.

I'll get back to the article:

> The federal Liberal government plans to spend $4.5 billion to buy the Trans Mountain pipeline and all of Kinder Morgan Canada's core assets.
>
> Finance Minister Bill Morneau says that in return, Kinder Morgan will go ahead with its original plan to twin the pipeline this summer while the sale is finalized, which likely won't happen until August.

That's new.

> Once the sale is complete, Canada will continue the construction on its own, with a view to eventually selling the whole thing down the road, once market conditions would allow it to get the best price.

It actually doesn't say who's going to do the building.

> Morneau presented the options during an early-morning cabinet meeting today before ministers made a decision on how to proceed.

Here we go.

> Export Development Canada will finance the purchase, which includes the pipeline, pumping stations and rights of way along the route between Edmonton and Vancouver, as well as the marine terminal in Burnaby, B.C., where oil is loaded onto tankers for export.
>
> Morneau says the government does not plan to be a long-term owner and is in negotiations with interested investors, including Indigenous communities, pension funds and the Alberta government.

We took it away from a private investor with no tax dollars needed, and now we have put it on the backs of taxpayers.

● (0955)

The Chair: If I can interrupt, speaking of "on the backs of taxpayers", I've just been advised that these witnesses have come in all the way from Alberta. If there is an opportunity to do a five-minute presentation, they would like to do that.

I'll just throw that out there for you.

Mr. Jamie Schmale: How many witnesses do we have? Just one?

All right, I will end it.

How long do they get for a speech, 10 minutes?

The Chair: Ordinarily they get 10, but it seems that they're content with five. I think they'll take whatever they can get.

Mr. Jamie Schmale: Okay, I'll end.

The Chair: They're in your hands.

Mr. Jamie Schmale: How about I go another 15 minutes? Is that fair?

That would give 10 minutes and a couple of rounds of questioning.

I'll go 15 minutes more, if that's okay, Chair.

The Chair: Less than that.

Mr. Jamie Schmale: I can go less than that. Okay, I'll wrap it up.

Is everything okay?

Mr. Nick Whalen: I was just going to say that Scott Simms' rule from PROC is that in this situation, with unanimous consent, we could let the witness give her testimony. When she's done, Mr. Schmale can resume his speaking time.

The Chair: Let's let him finish in 15 minutes and—

Mr. Jamie Schmale: I forgot about the Simms rule.

Mr. Nick Whalen: There's no unanimous consent.

Mr. Jamie Schmale: Although it's not official, Chair, the Simms rule, from our good friend from Newfoundland, if we had an unofficial ruling—

The Chair: We're already speaking about a motion that's premised on something that's no longer going to happen, so why don't we just finish this and then carry on?

Mr. Jamie Schmale: Okay.

Let's talk about investment leaving Canada, because I think that goes to the core of it after the federal government has had to bail this out.

I already mentioned RBC's chief economist on how we are dealing with this. We right now have quotes being sent out via Twitter. This one comes via @DonMartinCTV, referring to finance minister Bill Morneau, "It's gonna take decades to collect $7.4 billion to finance the Trans Mountain expansion pipeline from tolls collected from oil exporters using the much smaller existing pipeline. Not sure how Morneau can suggest there's no fiscal hit on the government bottom line."

Paul Wells from *Maclean's* also mentions finance minister Bill Morneau, "Morneau is dead certain the expansion will have value for investors, which makes me wonder why he is also eager to get rid of the pipeline instead of keeping it as an appreciating federal asset."

I actually disagree with that totally.

Next we go to Tonda MacCharles—I don't know who that is—who also references finance minister Bill Morneau, "Morneau is asked who pays if there is a spill. Morneau dodges; says what you're asking is if there is value? There is value there....we believe [the private sector] will purchase that value."

Well, again, going back to investment within the energy sector, especially here in Canada, if we are seeing the dollars continue to leave, and if we are then seeing the brains continue to leave, then I mentioned the effect as it cascades throughout the market, whether in mining or other major infrastructure projects. I think that does significantly worry many investors. It's happening.

I have a piece of paper here that lists quote after quote from investors and from people in the marketplace, the energy sector, and the trades. I don't have time to read them all, but they talk about the May 31 deadline quickly approaching. There were a lot of questions on whether or not they would actually make that deadline. We know that the deadline has been met, but not with moving forward with the private company; it was with having taxpayers take this off their shoulders.

This is from David Smith. I'll just paraphrase here as I pick and choose. I was going to read them all, but we don't have that much time. Talking about Kinder Morgan, he said that it has become clear that this particular investment may become unattainable for a private party to undertake. David Smith said that on April 9.

Clearly there are questions on this, at the end of the day. Will a private company see value at the end of this? Who will get this built now? And do we need the federal government to continue guiding projects that have gone through the process of being approved?

● (1000)

I want to read another article. It talks about how the Kinder Morgan project causes significant issues within the investment community. This article talks about the B.C. government launching several legal challenges against the project, including the attempt to control the shipment of oil through the province, and the federal government's approval of this project:

> According to Kinder Morgan, these legal challenges and the uncertainty they've created led the company to conclude—

As we know already, that set the May 31 deadline into motion:

> —that it can't risk the billions of dollars in resources needed to complete the project until the uncertainty about the pipeline's future is resolved.

That is according to this article:

> Put simply, the B.C. government is undermining the rule of law by effectively dismissing the federal government's authority and its regulatory agencies, which have already approved the pipeline, adding to the many government policy choices that signal to domestic and foreign investors and entrepreneurs that Canada is not hospitable to investment.
>
> Indeed, anti-investment policies are in vogue across the country. Ottawa and several provinces have raised tax rates on personal income, corporate income and payroll; introduced new regulations on carbon, resource projects and labour; and generally increased the costs of doing business....
>
> The cumulative effect of such policies, along with Ottawa's strong anti-business rhetoric, has struck a harsh blow to Canada's investment climate. Adding salt to Canada's self-inflicted wounds is sweeping tax reform in the United States that has wiped out Canada's nearly two-decade business tax advantage over the U.S., and also made the U.S. personal tax system even more attractive for skilled workers.
>
> It's no wonder investors are turning their backs on Canada, as the Royal Bank of Canada's CEO recently put it, "in real time we are seeing capital flow out of the country".
>
> But Canada's investment project problem is not simply anecdotal. The overall data paint a concerning picture. Business investment (excluding residential structures), is down nearly 20 per cent since the third quarter of 2014. Stats Canada's latest survey on investment intentions for 2018 found that private-sector investment is slated to fall again this year – the fourth consecutive annual decline. Meanwhile, foreign direct investment (FDI) in Canada has plummeted since 2013. And for the first time since data has been collected, in 2017 foreigners sold more Canadian assets than they bought.

That's the first time since data has been collected. In 2017, again, people investing in Canada sold more Canadian assets than they bought. The article continues:

> Declining business investment, coupled with the fact that Canada now has the second-lowest level of business investment as a share of GDP among a group of 17 industrialized countries, should be of great concern to Canadians given the positive effect investment has on economic growth and overall living standards. If investment in Canada keeps falling, Canadians will be economically worse off in the future.

It concludes with this:

> Although Kinder Morgan's Trans Mountain pipeline is just one project (albeit a large one), its termination—

—this article warns—

> —would symbolize a broader investment problem in Canada – one that is exacerbated by harmful government policies.

That was published on April 10, 2018, and it is from everyone's favourite research institute, the Fraser Institute. I know it's a favourite of mine. It is a very reputable firm.

You can find that article on the Fraser Institute's website. I just want everyone to have a gander at that because the article points out quotes that are already being made by professionals and investors already in the industry.

● (1005)

This article is from the April 29, 2018, edition of the *National Post*. The headline reads, "The 'slow bleeding' of corporate Canada is about to get underway and only Bill Morneau can stop it."

Obviously, this was done a month ago and that was when we thought maybe a plan to keep private investment going in this country was a top concern.

> The chief executive of a large Canadian company said he was at a Vancouver board of trade dinner this week.

> "The level of foreign investment has never been so low and continues to fall off a cliff. There is a real, genuine, honest, non-partisan concern that Canada is so completely out of touch with the real world," he said.
>
> The CEO said his contemporaries in corporate Canada speculated that a number of companies, including Enbridge, the country's fourth biggest company by market capitalization, are set to decamp.
>
> "The rumour is they've been planning to move for a while and the U.S. tax changes sealed the deal," said the disillusioned CEO.

I will scroll down here because I'm running out of time.

● (1010)

Mr. T.J. Harvey: Could we get the abbreviated version?

Mr. Jamie Schmale: Yes. I'm trying to pare this down. I have a lot to go through and I only have five minutes to do this, so I'm going to—

Mr. T.J. Harvey: It was five minutes when they called me back in here.

Mr. Jamie Schmale: Let's see. I'm going to talk about—

Mr. Marc Serré: This is going to be the good part.

Mr. Jamie Schmale: I'm good. I'm going to skip that article because it is a long one.

Mr. T.J. Harvey: Are you going to reference the *Calgary Sun*?

Mr. Jamie Schmale: I can, if you want. You have to look at all sides, T.J., my friend. I read the *Toronto Star*. It pains me, but I read it.

Mr. T.J. Harvey: What about the Huffington Post?

Mr. Jamie Schmale: What's that? Sorry. I didn't hear you. I was concentrating.

Mr. Marc Serré: I was just trying to make a joke.

Mr. Jamie Schmale: No, no. I'm all up for jokes, here.

I'm just finding the article.

Suncor Energy has said they are going to invest $50 billion over five years in the United States in their energy sector. This is an investment that will help the employment rates in the United States using the laws of supply and demand and organically raise wages across the marketplace as companies compete for the best workers. You're going to see quality of life increase because of this private sector investment. You're going to see new markets accessed where Canada is going to lose out. We could already be exporting off our east coast even more if it wasn't for energy east. It would have brought thousands upon thousands of jobs to the east coast.

We continue to allow tankers from other countries, many from foreign despots like Venezuela and Saudi Arabia, to access our east coast. We can all take a look at what's happening in Venezuela and how the rise of crippling socialism has crushed that country, as well as the nationalization of the oil sector and the agriculture sector. Credit has crushed that country. Again, it's not the government that's starving; it's the people on the street begging for food who can't keep their lights on, but the government has their lights on.

Here we have a private company, Kinder Morgan, that wants to use investor dollars to build a pipeline to access growing markets in Asia. Now we have an issue with the government failing to lead on this file and creating a situation where Kinder Morgan had to set a deadline. There was no plan to get this project built. It was put forward, except for the fact that now, in order to get it built, we have to nationalize this project. That, Mr. Chair, is an unfortunate demonstration of the lack of leadership of the Prime Minister on this file.

I'm hoping that I have talked enough, and I'm right on time. I hope I will convince my colleagues across the way. Maybe I have Nick and maybe Marc. He has his happy tie to vote in favour of this motion.

● (1015)

Mr. Ted Falk: It's a great motion.

Mr. Jamie Schmale: It is a great motion. Thank you, Ted. Ted thinks it's a great motion.

It is a great tie, too.

Vote in favour, get this study going, and talk about investment in Canada.

Thank you, Mr. Chair.

The Chair: Thank you, Mr. Schmale.

Ms. Ng, you are next on the list.

Do you want to say anything before we move on?

Ms. Mary Ng (Markham—Thornhill, Lib.): Yes, Mr. Chair.

I would like to move that the debate be now adjourned.

The Chair: We'll vote on Ms. Ng's motion that the debate be now adjourned.

(Motion agreed to)

The Chair: I'd like to invite the witnesses to come and join us at the table, please.

We have Alison Thompson and Zack Harmer from the Canadian Geothermal Energy Association.

Thank you for your patience and for sticking around. We have a little bit more time than we thought. You can have your 10 minutes to do your presentation, if you want, and we'll even have time for some questions, too.

Ms. Alison Thompson (Chair of the Board, Canadian Geothermal Energy Association): I think we will try to hold to the five minutes. I'm a speed-talker and a speed-reader. We'll weave in the story of some of the first nations along the Kinder Morgan pipeline as well, just to keep it relevant for this morning.

Bonjour. The Canadian Geothermal Energy Association, CanGEA, would like to thank the committee for today's invitation to discuss the need for national geothermal data.

We'd also like to acknowledge that we are on first nations traditional territory. Many of our members are first nations themselves or are part of the supply chain, or are working with first nations on their traditional territories.

We're a member-based association and represent the full supply chain of the industry. We're also the front line when it comes to accessing geothermal energy data. In reading the transcripts from other witnesses, we see that many have supported the idea of a national energy organization, a data organization, and we do as well. We'd like to spend our time with you today discussing the benefits of geothermal energy data.

I'm on slide 4, for anyone following along.

Our members are actively developing or are part of the supply chain and projects all across Canada. That includes Yukon, the Northwest Territories, British Columbia, Alberta, Saskatchewan, and Nova Scotia.

In particular, for the town of Hinton, the village of Valemount, the Simpcw First Nation, and at Borealis GeoPower, where I'm part of the management team, these different areas, villages, towns, first nations, and companies are all developing geothermal projects along the Kinder Morgan pipeline. We'll do our level best to ensure that the pipeline is as green as possible in its energy needs, in both power and heat.

CanGEA also recently assisted the Government of Nunavut with a better understanding of the benefits of geothermal and why they should also have favourability maps.

To go to slide 5, as you've heard from us before, geothermal is in some ways the least understood renewable energy. The resource itself is like oil and gas or mining, in that it has many different types of source rock. If you'd like to ask questions about geothermal in particular during the Qs and As, we can take those then. I'll just keep moving along to slide 6. This fact makes mapping the resource and resource estimates of high value to the industry and requires reservoir engineers, as well as geologists and geophysicists.

We are complicated. We have a lot of data and, obviously, a lot of data needs. The different rock reservoirs also dictate the power plant technology—the drilling and completions approach—and that then affects regulatory and permitting approaches. Again, many users—or the developers themselves—and governments rely upon this data.

Some of the features that CanGEA has to support national geothermal energy data include the creation of a Canadian national geothermal energy database. We have done that—not the Geological Survey of Canada. CanGEA currently hosts the Canadian national geothermal database. We also developed a Canadian code for public reporting for companies wanting to list on the Toronto Stock Exchange in order to keep the inherent trust and investor confidence high.

Geothermal favourability maps have been prepared by CanGEA for Alberta, British Columbia, and Yukon. We influenced the one in Nunavut, which should be released soon. We've also helped Nunavut understand that even though they may not have geysers, volcanoes, and hot springs like some other parts of Canada, because of their cold weather and the delta temperature between the cold weather and the heat inherent in the ground, even Nunavut has geothermal potential through its delta temperature.

My favourite slide is slide 7, and for an odd reason: we expect that 2018 will be the last year that there is no geothermal power in Canada. We believe that there's one project in British Columbia, in the village of Valemount, and also some in Alberta that have the potential to produce power in 2019, with Saskatchewan's following closely in 2020 or 2021.

As shown on slide 8, most geothermal-producing countries have ample publicly available data, what I'll call metadata. In our submission, we use the United States as an example of the value of the prospector tool and also of favourability maps. It's this metadata and this ability to search maps and publicly available websites that really add value to the industry.

In our country, it's actually unusual, compared to other geothermal countries, that oil and gas and mining data is logged with the government. Other industries can go into that information and actually see what the temperature is and what the rock is. These are pre-exploration tools for the geothermal industry, so we can leverage other industries a great deal, given the data that is available. If it were more easily accessible and organized, obviously that would cut costs and make projects go a lot quicker.

I'm at slide number 9. In our country, the data gaps are very clear. We'll go through a few of them.

First, there is a lack of the feasibility maps. I mentioned that only a few territories and provinces have them. We'd like to see the rest of the country have those as well.

We'd also like to see more federal support for energy funding. In particular, the Geological Survey of Canada does not yet have a mandate to support geothermal energy, yet it's the most well-positioned to be a partner in developing the industry and supporting it with hosting the data, and also in coming up with the metrics around how data should be collected.

● (1020)

We feel that metrics such as dollar per megawatt or dollar per megawatt hour are not picking up the benefits of geothermal. Geothermal has a very small footprint. It also has ancillary benefits such as heat. Because we're basal, we contribute power or heat 24 hours a day. These types of extra benefits aren't picked up when you compare geothermal against a natural gas peaking plan or wind or solar project if you're just using a dollar per megawatt metric. We encourage the use of a variety of metrics. The United States uses something called avoided cost metrics. Those are the ones that truly compare apples to apples, and not apples to oranges.

We're also looking at more awareness of what geothermal energy is. I quickly went through a slide earlier that talked about the different types of source rocks. There is still a lack of understanding between geo exchange, which is a very shallow type of geothermal energy that's used to heat homes, versus more proper geothermal that CanGEA represents, which is drilling typically one to three kilometres, much like oil and gas, into rocks to access steam or a hot water resource.

I'm going to skip ahead to slide 12 and talk about how, on government websites, particularly Environment Canada and NRCan themselves, geothermal is not mentioned, ping-ponging back to CanGEA being the front line. We don't receive funding to be that public awareness data source. We'd like to partner with the Geological Survey of Canada, and certainly with Environment Canada and NRCan, to at least be depicted on the website so that when the general public goes searching for information, there is a government face to this and not just an industry face to the industry.

I want to read into the record our four recommendations:

One, the Geological Survey of Canada should receive funding and a mandate to support geothermal exploration and development: the metadata, the maps, the database, and support programs.

Two, increase the number of risk-reduction programs, such as a prospector tool that the United States is using for geothermal developers. We've included a case study in our brief.

Three, evaluate renewable projects using levelized cost and levelized avoided cost models that really compare apples to apples and the features of the energy, not just the dollar per megawatt installed, which can be misleading in our case.

Four, raise public awareness and knowledge on geothermal energy and heat.

Those are our specific recommendations for the national data submission. However, we have four general industry recommendations as follows:

One, continue the excellent progress we've made so far with this committee's help and with the finance committee, in co-operation with NRCan, to allow geothermal projects to claim similar tax benefits. I would point out that it was this committee and other committees like yours that functionally changed our industry in 2017, and we're deeply grateful for that. When you go back and look at all the different projects that are being developed now, it's directly because of some changes that were made in rooms such as this, so I convey our thanks to you.

Two, move the Government of Canada towards becoming net zero from a procurement point of view for power and heat. Obviously the geothermal industry would like to participate in that.

Three, continue the direct government contributions to geothermal projects. Let's get some of these off the ground.

Four, initiate more federal geothermal heat programs. The renewable heat is still a yet-to-be-supported initiative on the larger scale. Electricity has been supported greatly over the years, and we're looking to now move beyond just electricity to renewable heat as well.

Thank you for your time today.

● (1025)

The Chair: Thank you very much.

Ms. Ng, I think you're going to start us off.

Ms. Mary Ng: We're going to have Mr. Whalen.

The Chair: Nick.

Mr. Nick Whalen: Thank you very much, Ms. Thompson and Mr. Harmer, for coming today to help us with our study on energy data.

It's very interesting to know that Canada will finally have some geothermal in production in short order, which is great news. It seems to be possibly the cleanest of the energy sources. Even the heat dissipated from the use of the heat, either as electricity or to heat homes, or however, is then just recycled back into the earth. Very little of it is going to be expelled into space. It seems to be a no-brainer.

You've talked about certain types of data being of use to your industry. Can you explain a bit more? We already have some maps that you've provided. What additional mapping data should be made available? What additional survey should be made available? Is this something that the Government of Canada should undertake or something that it can simply compile from other people who are undertaking these geological surveys?

Ms. Alison Thompson: I think there are really two ways to achieve the data, and different countries make use of both methods. There are really three things our industry wants: the flow rate, the permeability, and the temperature of the source rock. Those three things can help you with the economics of a project.

For example, in some of the government-funded projects I spoke about, one of them being the Borealis project in Valemount, which is sustainable and a demonstration, certainly we would like to see the government-funded programs have to submit their data so that other developers can use it as well. One way to get a whole bunch of data all at once, if you're going to support projects with federal dollars, is to have them actually share their data so other people can learn quickly from it.

Another way for them to do it is to instead invest money in the Geological Survey of Canada themselves to drill their own wells. That's actually been done in the Yukon. The Yukon Geological Survey has drilled two wells in the past six months. You see both styles of that approach happening.

Really, though, we just need to get more data. It's a big country, so we need to prioritize different regions, fill in the gaps in the metadata, and the developers will take over. We truly are the last country in the world. We love geothermal, and we want to get onto it, but the risk still is fairly high with the wildcatting of the wells.

Mr. Nick Whalen: We heard from Nalcor, the Newfoundland and Labrador energy corporation. It has a NESS project, which is meant to exchange seismic data.

Newfoundland and Labrador is in the process of trying to categorize, log, and digitize its three million metres of core sample data from mining exploration and make that publicly available. Is this the type of data you're talking about, from the other types of geo sampling that is done by industry, and you're saying, "Okay, you guys have had it as private data now for long enough. Make it available to the public, through a website"? Would that be considered energy data?

Ms. Alison Thompson: That would be energy data, so in terms of rock types, for example, with hot springs, you actually find gold. It's called epithermal geothermal. You find gold in old hot springs. Therefore, where mining companies are, usually geothermal companies are as well.

There's an incredible overlap between the oil and gas industry and mining. We're not really looking for any further data, but just kind of filling in those gaps and sharing.

● (1030)

Mr. Nick Whalen: In terms of the expected value of this resource to Canada, when most people think about geothermal, they are thinking about a heat pump in their own home. They're not really thinking about essentially boiling water to pass it through turbines, which is the type of geothermal you're talking about. When one of these hot spots is found, is there a limit to how much power can be generated from it? Is that something you calculate, or is it that once you find one of these, you can slap as many pipes down as you want and there's enough heat for an unlimited supply? What's the science?

Ms. Alison Thompson: It's a lot like oil and gas. There is a reservoir. Everyone is going to have a different sized reservoir, but you want to match the production with the injection. To make it renewable, you need to balance that.

If you want to sprint, you can take more and maybe slap on some more plants at the beginning, but then you'll run the reservoir down. That balance is really why a reservoir engineer is needed, much as in the case of oil and gas techniques. Some utilities shy away from geothermal because they don't have a resident reservoir engineer.

Those are the types of interplay between the oil and gas industry and the mining industry that we need to make with the utility company. They don't have these technical staff members. I think having data and by proving to them that these are measured resources—they may have been measured by another industry, but they are completely transferable to the data geothermal needs—would help.

Mr. Nick Whalen: One of the previous presenters today talked about collecting environmental risk factors and measuring those as part of the energy data. I'm not necessarily sure I agree with that, but it's on the table.

In your particular case, geothermal is a relatively new technology, and I wonder whether or not there are environmental risk factors associated with that that we can measure. If we try to cool down the Yellowstone caldera, and we do, what happens? Is there going to be some type of net detriment to the overall ecology because of something like that? Is that something scientists are working on? Is there some way we can measure geological risk associated with these projects?

Ms. Alison Thompson: The industry is going to be regulated by, for example, the Alberta Energy Regulator, the BC Oil and Gas Commission, or the Mackenzie Valley Land and Water Board. I think we're really fortunate that the oil and gas industry has led in the sense that the regulators already have in place things like monitoring seismic activity from drilling wells.

With my example in British Columbia, in Valemount, we've had 10 passive seismic stations installed since last August. It's a hub of information, and it can measure more than just information on our project. It can measure earthquakes around Canada and obviously the ones off Vancouver. We share our data too, so it's not a one-way street; it's a two-way street. Because the other industries are so mature, the regulators themselves understand very well how to regulate the industry for environmental hazards.

Mr. Nick Whalen: With regard to my final question, I'm not sure if it's a $100-million question or a $100-billion question. What do you expect the value of your industry would be if we developed 10% of our hydrothermal resources?

Ms. Alison Thompson: A good rule of thumb is about $4 million to $5 million per installed megawatt. I'll give you a real-life example, and I'll used the Valemount project again. One hundred million dollars would build you a 15 to 20 megawatt electricity plant that would operate constantly. It would give you about 100,000 tonnes a year of CO2 offset. It would give you about 30 full-time jobs and about 2,000 person years of construction time. There are a lot of benefits that accrue from a very focused investment.

Mr. Nick Whalen: Well, a place like Newfoundland and Labrador is 98%—

Ms. Alison Thompson: Hydro.

Mr. Nick Whalen: —hydro, so we wouldn't get the CO2 reductions in our market. Is it as compared to using coal or as compared to using natural gas? When you talk about your CO2 reductions, are you talking about a worst-case scenario or a normal one?

Ms. Alison Thompson: It would be as compared to coal or diesel, absolutely. A lot of our focus would be on the three territories. They're exclusively on diesel. Even small microprojects—we call one megawatt or less a microproject—have very large positive impacts. The country of Iceland is, obviously, a very big geothermal country to begin with, but it recently purchased 100 mini turbines. It's going to put these all over the country and take care of even more electricity needs in the remote villages that have been on diesel.

Nothing's too small and nothing's too big. We have all this in Canada, and 2018 will be the last year that we sit here and say that there's nothing left. We're going to move forward, and 2019 will be a breakout year for us.

The Chair: Thank you.

Thanks, Mr. Whalen.

Mr. Falk.

Mr. Ted Falk: Thank you, Mr. Chairman.

I have no motion to carry forward, so I'll just dive right into the questions if that's okay with you.

● (1035)

The Chair: The suspense is killing us.

Mr. Ted Falk: Thank you, Ms. Thompson and Mr. Harmer, for coming to committee. Your presentation was very interesting.

You identified three main types of data that you wish somebody would be collecting and assimilating. Is there other data that you think would be important, and is there data in those streams that already exist that isn't being tabulated?

Ms. Alison Thompson: The oil and gas industry does a great job of measuring depth of well and temperature—so, the bottom hole temperature—and then also things like the permeability or the flow rate. Those would be additional things we could ask the oil and gas industry to share more readily. I don't believe that the mining industry has a necessity to record bottom hole temperature the same way that oil and gas does, and that's a very small change. It certainly would be a burden on the mining industry to ask it to do that, but that one piece of data-gathering would be very useful to people in geothermal.

Mr. Ted Falk: How does geothermal electricity compare in cost to other forms?

Ms. Alison Thompson: The worldwide average for geothermal cost is about $40 per megawatt hour. That's about what Alberta is paying these days or about half of what is paid in British Columbia. It's really because it's a long-life asset. The countries involved, New Zealand and Iceland, and the state of California have been producing for over 50 years. They get to the point where they don't even turn off the machine at the end of life. They'll just refurbish it. It's much like a hydro dam or a nuclear plant in that it has a very long life. As for the operating cost, of course, the fuel is free.

It's very competitive, but you have to get over the idea that drilling wells is risky. So, as opposed to feeling that it's risky, if we could use the data and metadata that's available or at least organized by organizations like the Geological Survey of Canada, we'd be better prospectors ourselves and, obviously, the cost would go down.

Mr. Ted Falk: Is that a resource that can be turned on and off at will?

Ms. Alison Thompson: It really is. The earth is constantly bubbling away and, obviously, you'd be producing your wells. What you may do is still just spin your turbine as opposed to making electricity. You probably would still produce your system, but you wouldn't necessarily have to put it onto the grid. Typically, as an industry, we are base load, and in the merit order—if those are words that you are familiar with—we're actually before coal or hydro. The dams themselves would be batteries, and that's highly valuable to sell into peak markets. You'd run geothermal first and allow organizations like BC Hydro to hold back their dams and sell it strategically into different markets at different times of the day.

Mr. Ted Falk: Is there any data that exists today as to how large a resource we have here in Canada?

Ms. Alison Thompson: We're at least suggesting that there are 5,000 megawatts in Alberta alone. B.C. has several thousand megawatts as well. It really is a very large resource.

However, much like oil and gas, it only exists in certain places, so you really have to match the resource size with where it's needed. I think the heat market.... Heat can be sold anywhere in Canada, but for electricity, you really have to mirror the resource with a transmission line. It becomes costly, of course, if you have a resource in the back 40 and not near a transmission line.

We're very bullish about heat being used everywhere, and about geothermal power being deployed extensively, but in a very focused way.

Mr. Ted Falk: Who would you suggest should be the collector and the keeper of the data?

Ms. Alison Thompson: Right now the Canadian Geothermal Energy Association is, and we're happy to host that. We really feel that we're just a stand-in until the Geological Survey of Canada is provided a mandate. I think they are very keen, especially the Calgary office, to play this role. They have been invited in by industry, but NRCan obviously needs to find the funding and make that part of an official mandate.

Mr. Ted Falk: You also indicated that we're one of the only countries. I'm sure we're not the only one, but we're one of the few countries that doesn't have geothermal plants as you're describing. Are there standardized energy data sources out there in other countries of the world that have collected data on their geothermal resources?

Ms. Alison Thompson: Absolutely. We are actually the last large country...on the Ring of Fire, the volcanic ring that goes around the earth. We hold that distinction, but, again, probably for only one more year. I think the United States is the largest producer of geothermal in the world. They've been at it for well over 50 years. They're the best model for us. They're set up as a Department of Energy, much like we have departments here, that works with the oil and gas and mining industries. We have this data. It's a matter of sharing it and organizing it.

Mr. Ted Falk: So there are standard forms already in existence—

Ms. Alison Thompson: Absolutely.

Mr. Ted Falk: —that we could actually piggyback off.

Ms. Alison Thompson: That's what CanGEA has done. As a private non-profit, we have leveraged those models. We host them in Canada, as a springing-off point, as a best practice.

● (1040)

Mr. Ted Falk: Mr. Chair, I'll release my time and give it to Mr. Cannings.

The Chair: Okay.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you, Mr. Falk.

Thank you for coming here.

This is about data as well as geothermal. You talk a lot about de-risking with sharing of data, and doing research on mapping, etc. A friend of mine, Ross Beaty, was in this business for some time. Eventually, from what I understand, he found it too risky and moved on to other things. What we do here is geothermal not so much from hot points in the earth's mantle, but just warm points that we've already drilled down to. I'm talking about old oil wells, and we hear a lot about orphaned oil wells. I think we've had some people here before the committee, or at least they've met me in my office, who have plans for geothermal from old oil wells. I'm just wondering what the prognosis for that is. It's less risky. The holes are already drilled. It's just a matter of tying them together and getting them on the grid.

Ms. Alison Thompson: Absolutely. We call that "measured data". Somebody has already drilled a well, produced it, and collected all the data possible. You can either repurpose that well or drill a brand new one that's more optimized for geothermal production. Oil and gas wells have a certain diameter. No matter how good your reservoir is, you're only going to get a certain amount of energy out of that diameter of well. If you know the resource is there, but drilled a large well, "fit for purpose" for geothermal, you'd be able to have the benefit of that same data, but more extraction of the energy.

Mr. Richard Cannings: I was under the impression the benefit was the fact the hole had already been drilled—

Ms. Alison Thompson: The infrastructure, yes.

Mr. Richard Cannings: —but you're saying the benefit is more that you know what the temperature is down there.

Ms. Alison Thompson: That's right. It's the confidence in the measured data, because it's been flowed.

Mr. Richard Cannings: How active is that part of the market in terms of development? Instead of having these hot single points, is there any active interest in more distributed warm points being brought together?

Ms. Alison Thompson: There's a lot of active interest in Saskatchewan, northern B.C., and all across Alberta. The regulator has not caught up with the interest in using old infrastructure. By that I mean the Alberta Energy Regulator or the B.C. Oil and Gas Commission. Those things are going to be outside of this committee's purview, but at the same time that sharing of data may relieve some of the anxiety that some of the regulators have if they saw the measured data. The sharing of data I think is key. There are a lot of people who don't yet believe it could work until they see something working.

Mr. Richard Cannings: Getting back to what Ross Beaty found, or from what I understand from your presentation, if you have more data on possible reservoirs of heat or whatever in Canada, would that de-risk the situation enough for projects to really move forward? You have a separate de-risking ask in your list. I'm wondering what more the government needs to do before investors like Ross could move head and do this.

Ms. Alison Thompson: We tried to lay out two alternatives. Either the Geological Survey could drill the wells themselves or you could have investments into consortium-style companies that drill the wells but then share the data. Either way, Canada and other prospectors get to use the data. There just need to be more projects. We have geothermal resources right across Canada, especially in western and northern Canada, and the idea that we could have many firsts—the first one in B.C., Alberta, or Saskatchewan—would allow step-out projects that would come from that.

Mr. Richard Cannings: My understanding is that there's another project of some geothermal sort happening in Lakelse Lake, near Terrace.

Ms. Alison Thompson: That's right.

Mr. Richard Cannings: Do you know what the status of that is?

Ms. Alison Thompson: I do. That's also a Borealis project that has partnered with the Kitselas First Nation. There are two or three permitted projects in British Columbia. Again, the regulatory provincial body has granted permits. None of those projects exists in Alberta right now, which is unfortunate, but we're hoping the Alberta government will start to permit projects. There's one permitted project in Fort Liard, Northwest Territories. There's also a project that has been permitted in Saskatchewan. There are just a handful of provincially or territorially permitted projects. It doesn't mean the opportunity set isn't larger, but the regulatory side at the provincial level needs to catch up.

● (1045)

Mr. Richard Cannings: Okay, thank you.

The Chair: That's unfortunately all the time we have. Thank you for your patience in hanging in there with us, and thank you very much for your presentation.

Mr. Schmale, thank you again for accommodating the witnesses.

Mr. Jamie Schmale: No worries.

The Chair: We'll see everybody on Thursday.

The meeting is adjourned.

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